



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,395	02/11/2004	James Warren Rudolph	4865-185	3918

7590 09/10/2004  
BARLEY SYNDER  
PO BOX 1559  
LANCASTER, PA 17608-1559

EXAMINER
----------

GIBSON, RANDY W

ART UNIT	PAPER NUMBER
----------	--------------

2841

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/776,395

Applicant(s)

RUDOLPH, JAMES WARREN

Examiner

Randy W. Gibson

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 August 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed August 23, 2004 have been fully considered but they are not persuasive. Applicant arguments seem to be a repeat of arguments presented in the appeal brief filed in the parent case. The Board of Appeals and Interferences had previously found these same arguments to be unpersuasive when presented in the parent case.

### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Golecki et al in view of Yoshida et al, Yano et al, Spoor, Piroozmandi, and Swadzendruber. Golecki et al discloses, in one embodiment, weighing parts in a furnace during a Chemical Vapor Deposition (CVD) or Chemical Vapor infiltration (CVI) process and using the corresponding weight signal to vary process parameters, such as internal furnace pressure, reactant gas flow rate (I.E.: mass flow rate), and/or power to the heating coil (Col. 6, line 59 to col . 7, line 22), in real time (Col. 7, lines 42-52; Col . 8, lines 52-61). In the device of Golecki et al, however, the weighing device 13 is not situated such that it can weight the entire furnace including the contents as claimed; by contrast, the weighing device of Golecki et al is located inside a chamber 19 adjacent to

the main furnace chamber 1 where it only weighs the substrates 4 and the substrate supporting mandrel assembly 3.

However, Golecki et al disclose that this embodiment has some problems since they disclose that they need to inject inert gas into the weighing housing 19 to prevent vapor deposit build-up on the electronic weighing device itself, and they disclose that the weighing chamber itself needs to be held at a constant temperature to insure weighing accuracy (Col. 8, lines 1-10).

It is known in the weighing art that electronic load sensors loose accuracy when exposed to fluctuating temperatures as shown by the examples of Yano et al (Col. 1 , lines 39-48) and Spoor (Col. 1, line 20 to col. 2, line 28). Since heat rises, and since the weighing chamber of Golecki et al is attached to the top of, and is in gaseous communication with the main chamber of the CVI/CVD furnace (since the aforementioned paragraph at the top of column 8 implies that vapor from the furnace moves in and out of the weighing chamber), there is a problem with the design of the weighing device of Golecki et al that would be apparent to the ordinary practioner in the weighing art -- namely, the loss of accuracy caused by vapor deposit build-up on the load cells and temperature induced variations in the accuracy of the electronic load cells as the furnace begins to heat up. Yoshida et al shows that one known solution to the problem of temperature related changes in the accuracy of electronic load cells when weighing items in a furnace is to relocate the load cells under the furnace (since heat rises) and to insulate it from the heated chamber (Col. 3, lines 54-59). Presumably, the same effect could be achieved by placing the load cells under the supporting legs of

the furnace itself which would have the additional advantage of isolating the load cells from the vapor inside the furnace chamber (thus also solving the problem of deposit build-up mentioned by Golecki et al).

It is well known in the weighing art that a relatively fast and inexpensive way to retrofit a large vessel-like device, like the CVI/CVD chamber 1 of Golecki et al, to enable it to weigh its contents, is to simply place load cells under the supporting legs of the vessel as shown by the examples of Piroozmandi (Col. 2, line 30 to col. 3, line 54) and Swazendrubler (Col. 2, lines 50-58). It would have been obvious to the ordinary practitioner to modify an existing CVI/CVD furnace chamber to include load cells under it, using the method suggested by Piroozmandi or Swartzendrubler, for the purpose of monitoring weight change in the contents of the chamber and adjusting process parameters accordingly as taught by Golecki et al.

### ***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

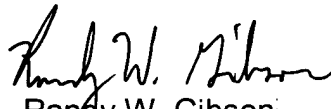
Art Unit: 2841

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randy W. Gibson whose telephone number is (571) 272-2103. The examiner can normally be reached on Mon-Fri., 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571) 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Randy W. Gibson  
Primary Examiner  
Art Unit 2841